CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 86-68

WATER RECLAMATION REQUIREMENTS FOR:

MEADOWOOD ASSOCIATES AND
MEADOWOOD HOMEOWNERS ASSOCIATION
ST. HELENA
NAPA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The Meadowood community is located to the east of the City of St Helena, at 900 Meadowood Lane. The community consists of the Meadowood Homeowner Association, or the so-called 43+ unit Madrone Knoll Subdivision, and the Meadowood Planned Development which is a 74 acre area currently developed by the Meadowood Associates. Major development in this area includes a 9-hole golf course, tennis courts, clubhouse, pool, restaurant, and various lodging facilities. The Meadowood Associates, under an agreement with the Meadowood Homeowners Association, operates a wastewater treatment and disposal facility which handles the domestic wastewater generated from the entire community. The Meadowood Associates and the Meadowood Homeowners Association are hereinafter collectively called the Discharger.

2. The Meadowood community's wastewater facilities is currently governed by the Board's Resolution No. 412 which was adopted on May 12, 1962. The Meadowood Associates, on September 3, 1986, filed a Report of Waste Discharge with the Board for the revision of its waste discharge requirements.

3. The Discharger operates a wastewater system which consists of three individually operated package treatment plants using activated sludge process followed by settling and gravity filtration. Plant Nos. 1 and 2 are located near the entrance with a designed treatment capacity of 15,000 gallons per day (gpd) each. An emergency holding tank has just been installed at this location which can provide a storage capacity of more than 24 hours. Plant No. 3 is located along the Silverado Trail and is rated 7,500 gpd. Treated effluent from all three package plants is pumped to a chlorination facility equipped with automatic chlorine injection feeder and a chlorine contact/surge tank. Chlorinated effluent is then discharged to a steep, rocky channel prior to being stored in a 1.5 million gallon (MG) landscape impoundment located in the golf course. Attachment A is a location map of the sewage facilities and is hereby made a part of this Order.

4. Projected average sewage flow is approximately 30,000 gpd when fully developed. During dry season, wastewater stored in the golf course lake is supplemented by well water and reclaimed for golf course irrigation through a sprinkler system. The golf course has a total

area of around 18-20 acres and is located at the bottom of a small ravine with steeper slope along the perimeter and flat in the center.

5. In case of overflow from the golf course lake, the wastewater would flow into an adjacent tunnel for temporary storage. The soil in the tunnel has a fast percolation rate which normally prevents wastewater from flowing further downstream into the tributaries of the Napa River.

6. Presently, the Discharger is investigating the possibility of connecting their sewage to the City of St. Helena's sewer system under an agreement in which, the Discharger, in return, would provide the City with effluent disposal capacity at the golf course. The feasibility of this proposal is still under study.

7. Surface runoff from the golf course and surrounding area presently flows to the tunnel entrance and to the golf course lake area. The lake is not bermed. Runoff enters the lake at various points around its periphery. Several overflow incidents occurred in the past during winter when there were excessive rainfall. The Discharger was recently required by the Board to evaluate its storage capacity in the golf course lake based on a once-in-ten year wet season. According to a technical report dated February 18, 1986, the result of this study showed that, in order to store projected sewage flow and direct precipitation on the lake during the 5 month wet season, the Discharger needs to increase its storage capacity by 2.5 million gallons while diverting away all the surface runoff.

8. The Meadowood Associates, in a letter dated May 21, 1986, has agreed to upgrade their sewage facilities by doing all necessary work as outlined in finding 7. above if they fail to tie their sewage into the City of St. Helena's sewer system in a reasonably short period. This temporary delay is to provide the Discharger with an opportunity of seeking a long-term solution for wastewater disposal.

9. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for the Napa River and its tributaries.

10. The beneficial uses contained in the Basin Plan for the Napa River downstream from the vicinity of Meadowood community are:

    a. Navigation
    b. Water contact recreation
    c. Non-contact water recreation
    d. Warm fresh water habitat
    e. Cold fresh water habitat
    f. wild life habitat
    g. Preservation of rare and endangered species
    h. Fish migration and spawning
    i. Municipal and domestic supply
    j. Agricultural supply

11. The beneficial uses of the Napa Valley groundwaters as set forth in the Basin Plan includes:

    a. Domestic water supply
    b. Agricultural water supply

12. Section 13523 of the California Water Code provides that a Regional Board, after consulting with and receiving the recommendations of the State Department of Public Health, and if it determines such action to be necessary to protect the public health, safety, or welfare, shall prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water.

13. These water reclamation requirements are in conformance with the statewide reclamation criteria established by the State Department of Health Services as prescribed in Title 22, Section 60301 through Section 60355, California Administrative Code.

14. This project involves the operation of existing privately-owned sewage treatment and disposal facilities with negligible or no expansion of use beyond that previously existing and as such is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Title 14, California Administrative Code, Chapter 3, Section 15101.

15. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe water reclamation requirements for the Discharger and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

16. The Board, in a public meeting, heard and considered all comments pertaining to this wastewater reuse.

IT IS HEREBY ORDERED THAT, the Meadowood Associates and the Meadowood Homeowners Association, in order to meet the provisions contained in Division 7 of the California Water code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The collection, treatment, storage, distribution, and reuse of wastewater shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. There shall be no bypass or overflow of wastewater into waters of the State from the collection, treatment, and storage system.

3. Reclaimed wastewater shall be confined to the golf course irrigation site unless written authorization has been obtained from the Board's Executive Officer. No reclaimed wastewater shall be allowed to escape from the designated irrigation site via surface runoff, airborne spray, or resurfaced flow after percolation.

4. Reclaimed wastewater shall not be used as a domestic water supply. There shall be no cross-connection between the potable water and reclaimed wastewater piping system. An air-gap separation must be provided between the reclaimed wastewater and any domestic water supply used as supplemental irrigation sources.

5. No reclaimed wastewater shall be applied to the irrigation site during a rainfall or when rain is predicted, or when ground soils are saturated to a point where runoff is likely to occur.

6. Ponding of reclaimed wastewater shall not occur in the irrigation area in amounts which could cause a mosquito breeding problem.

B. Reclaimed Wastewater Use Specifications

General Requirements for irrigation operation:

1. All equipment, including pumps, piping, valves, etc. with public access which may at any time contain reclaimed water shall be adequately and clearly identified with warning signs and the Discharger shall make all necessary provisions, in addition, to inform the public that the liquid contained is reclaimed wastewater and is unfit for human consumption.

2. The Discharger shall manage its application of reclaimed wastewater so as to minimize ponding or mosquito breeding problem.

3. Reclaimed wastewater shall not be applied on walkways, passing public vehicles, buildings, or areas not under control of the user. Drinking fountains and picnic tables shall be protected from direct or windblown reclaimed water spray.

4. The use of reclaimed wastewater shall not cause the degradation of groundwater suitable for domestic use or cause any change in a quality parameter which would make the groundwater less suitable for irrigation use.

5. Adequate means of notification shall be provided to inform the public that reclaimed water is being used. Conspicuous warning signs with proper wording of sufficient size to be clearly read shall be posted at adequate intervals around the storage pond. All three package treatment plant shall be fenced to exclude public entrance.

6. There shall be at least a 10-foot horizontal and 1-foot vertical separation (with the domestic water above the reclaimed water pipeline) between all pipelines transporting reclaimed water and those transporting domestic water.

Criteria for Reclaimed Wastewater Quality:

7. The Discharger shall assure that the reclaimed wastewater is at all times an adequately disinfected, oxidized wastewater that

meets the following quality limits at all times:

In any grab sample:

a. 5-day Biochemical Oxygen Demand	40.0 mg/l, maximum
b. Dissolved Oxygen	1.0 mg/l, minimum
c. Dissolved Sulfides	0.1 mg/l, maximum

At any point after the disinfection facility where adequate contact with disinfectant is assured:

d. The median number of total coliform organisms shall not exceed 23 MPN/100 ml as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms shall not exceed 240 MPN/100ml in any two consecutive samples.

e. Chlorine Residue 1.0 mg/l, minimum

8. The Discharger shall discontinue the use of reclaimed wastewater during any period in which he has reason to believe that the limits specified in B.7 above are not being met. The use of reclaimed water shall not be resumed until all conditions which caused the limits specified in B.7 to be violated have been corrected.

Golf Course Irrigation Site:

9. Unless special circumstances warrant daytime application, irrigation shall occur at night or early morning when the wind velocity is minimal and the golfers are absent. The grounds shall have maximum opportunity to dry before use by the public. The Discharger shall obtain approval from the Board before starting any daytime application of reclaimed wastewater.

10. There shall be no irrigation or impoundment of reclaimed wastewater within 500 feet of any well used for domestic supply or 100 feet of any irrigation wells unless it can be demonstrated that special circumstances justify lesser distances to be acceptable.

11. At golf course, notices shall be printed on score cards stating that reclaimed wastewater is used for irrigation.

12. The reclaimed wastewater shall not be applied within 100 feet of nearby houses or lodging facilities unless it can be demonstrated that special circumstances justify lesser distances to be acceptable.

Storage Pond:

13. To prevent threat of overflows, a minimum freeboard of two feet shall be maintained in all the ponds at all time.

14. All storage ponds shall be adequately protected from erosion, washout, and flooding from a rainfall event having a predicted frequency of once in 100 years. Surface runoff shall not be allowed to enter the ponds.

15. The bottom of any newly constructed storage pond must be lined or compacted so that percolation of wastewater into subsurface soils has a rate of slower than 10^{-6} cm/sec.

Alarm and Reliability Control:

16. Alarm devices shall be installed to provide warning of high water level in the treatment units. The alarm shall be independent of the normal power supply.

17. The power supply shall be provided with one of the following reliability features:

    a. Standby power source;
    b. Automatically actuated short-term (24 hours) retention or diversion to a less demanding reuse application; or
    c. Automatically actuated long-term (20 days) storage or diversion to a less demanding reuse application.

18. Standby chlorine supply capable of handling the demand of at least a 7-day period shall be stored on-site at all time.

C. Provisions

1. The Discharger shall comply with all prohibitions, specifications, and provisions of this Order immediately upon adoption except Prohibition A.2 and Specifications B.13.

2. To comply with Prohibition A.2 and Specifications B.13, the Discharger shall comply with the following time schedule:

Task	Compliance Date
1. Submit detailed design specifications and construction plan for the expansion of storage capacity by 2.5 MG and for diverting surface runoff away from the existing storage pond	June 30, 1987
2. Complete construction	November 30, 1987

The above time schedule would provide the Discharger with reasonable amount of time to seek the possibility of connecting its sewage system to City of St. Helena's sewer. The construction of the new storage facility shall comply with Specifications B.13, B.14, and B.15 of this Order.

3. The Discharger shall comply with a Self-Monitoring Program as ordered by the Executive Officer.

4. The Discharger shall permit the Board or its authorized representatives in accordance with California Water Code Section 13267(c):

   (a) Entry upon premises in which an effluent source is located or in which any required records are kept.

   (b) Access to copy any records required to be kept under terms and conditions of this Order.

   (c) Inspection of any monitoring equipment or method required by this Order.

   (d) Sampling of any discharge and reclaimed water.

5. The Discharger shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the water reclamation requirements.

6. A contingency plan shall be developed outlining the actions to be taken in the event effluent quality fails to meet required standards. The plan must be submitted for review, to the satisfaction of the Executive Officer, within 120 days of the effective date of this permit.

7. In the event of any change in control or ownership of land or water reclamation facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Board.

8. The Discharger shall file with the Regional Board a report on waste discharge at least 180 days before making any material change or proposed change in the character, location, or volume of the reuse, except for emergency conditions in which case the Board shall be notified immediately.

9. The Board will review this Order periodically and may revise the requirements when necessary.

10. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

    (a) Violation of any term or condition contained in this Order;

    (b) Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts; and

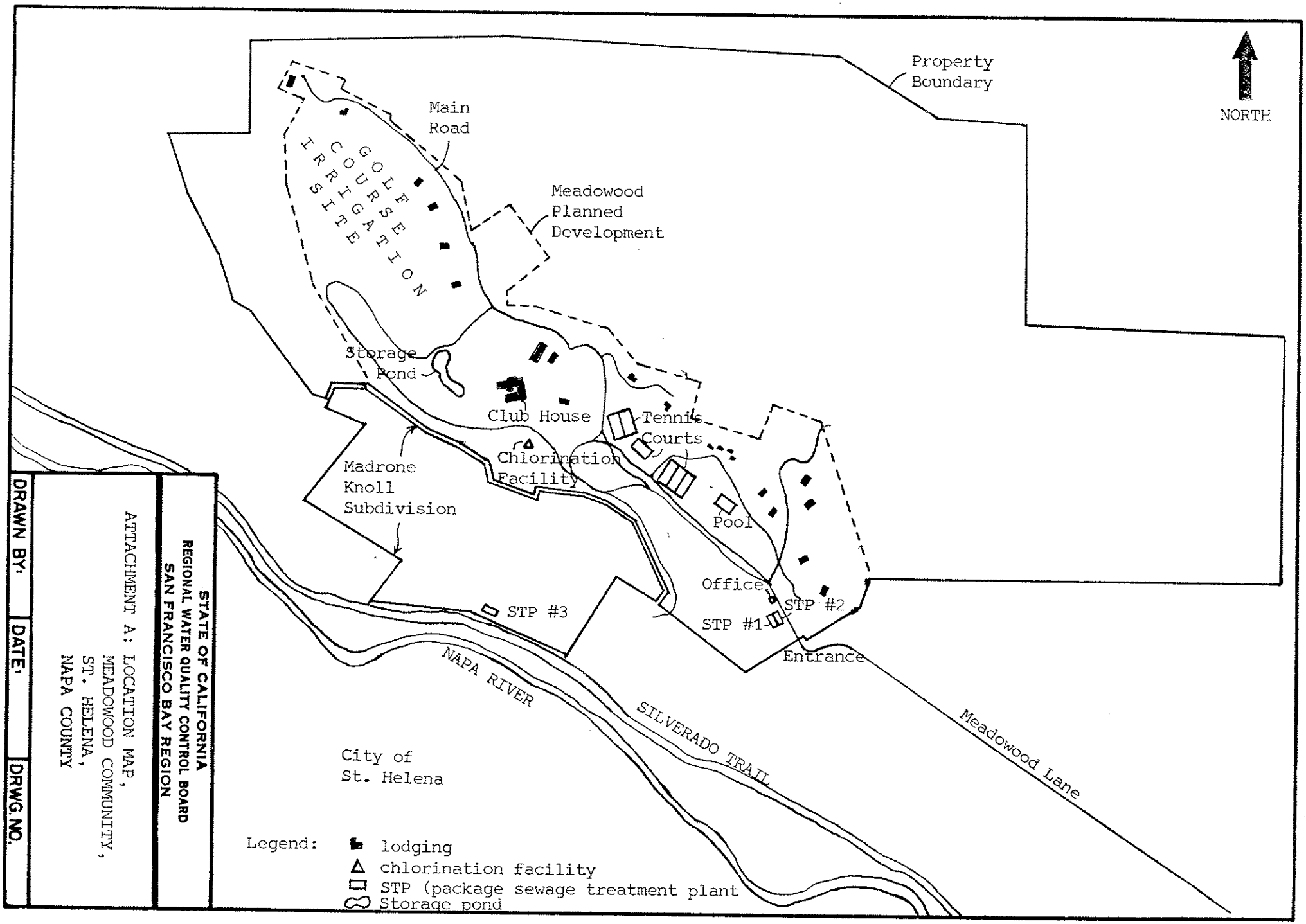
    (c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized reuse.

11. The waste discharge requirements previously prescribed by the Board in Resolution No. 412 is no longer applicable. Resolution No. 412 is hereby rescinded.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 17, 1986.

ROGER B. JAMES
Executive Officer

Attachments:
Location Map
Self-Monitoring Program


Property Boundary
NORTH
Main Road
GOLF COURSE IRRIGATION SITE
Meadowood Planned Development
Storage Pond
Club House
Tennis Courts
Chlorination Facility
Madrone Knoll Subdivision
Pool
Office
STP #2
STP #1
STP #3
Entrance
NAPA RIVER
SILVERADO TRAIL
Meadowood Lane
City of St. Helena
Legend:
lodging
chlorination facility
STP (package sewage treatment plant
Storage pond
STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
ATTACHMENT A: LOCATION MAP,
MEADOWOOD COMMUNITY,
ST. HELENA,
NAPA COUNTY
DRAWN BY:
DATE:
DRWG. NO.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

FINAL

SELF-MONITORING PROGRAM

FOR

MEADOWOOD ASSOCIATES &

MEADOWOOD HOMEOWNERS ASSOCIATION

ST. HELENA

NAPA COUNTY

ORDER NO. 86-68

CONSISTS OF

PART A

PART A

I. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger or reclaimed wastewater user, also referred to as a self-monitoring program, are:

1. To document compliance with waste discharge or water reclamation requirements and prohibitions established by the Regional Board.

2. To facilitate self-policing by the waste discharger or reclaimed wastewater user in the prevention and abatement of pollution arising from waste discharge or wastewater reclamation.

II. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the latest edition of "Standard Methods for the Examination of Water and Wastewater" prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health or a laboratory approved by the Executive Officer. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

III. DEFINITION OF TERMS

1. A grab sample is defined as an individual sample collected in fewer than 15 minutes.

2. Standard Observations

   a. Land Retention or Pond Area

      This applies both to liquid and solid wastes confined or unconfined.

(1) Determine height of the freeboard at lowest point of dikes confining liquid wastes.

(2) Evidence of leaching liquid from area of confinement and estimated size of affected area. (Show affected area on a sketch.)

(3) Odor: presence or absence, characterization, source, and distance of travel.

(4) Estimated number of waterfowl and other water-associated birds in the pond area and vicinity.

b. Periphery of Spray Irrigation Site

(1) Evidence of reclaimed wastewater escaping the irrigation site through surface runoff or airborne spray. (Show affected area on a sketch.)

(2) Odor: presence or absence, characterization, source, and distance of travel.

(3) Evidence of surfacing or ponding of reclaimed water as well as mosquitoes breeding within the irrigation area due to excessive spray.

(4) Warning signs or notices adequately posted to inform public that the water used for irrigation is reclaimed waste.

IV. DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING, ANALYSIS AND OBSERVATIONS

1. DESCRIPTION OF SAMPLING STATIONS

a. EFFLUENT

Station	Description
STP-001 to STP-003	Located at any point in the effluent from each individual package sewage treatment plant (Nos. 1, 2, and 3 accordingly), downstream of the filtration process, prior to being combined with other waste stream or entering the disinfection facility.
E-001	Located at a point in the effluent from the disinfection facility where all the waste streams are present and the effluent has had adequate contact with disinfectant, prior to being

pumped to the irrigation site.

b. STORAGE PONDS

Station	Description
P-1 thru P-'n'	Located at a point in each of the storage ponds, within one foot of the water surface and no less than three feet from the bank, representative of the wastewater.

c. LAND OBSERVATION

Station	Description
L-1 thru L-'n'	Located at ends and midpoints of the perimeter levees of all the storage ponds.
I-1 thru I-'n'	Located at points spaced equidistantly around the periphery of the spray irrigation area. Points shall be separated by not more than 1000 feet. A sketch showing the stations shall be submitted with the first monitoring report and subsequent self-monitoring report when station location is changed or a violation is noted.

d. GROUNDWATER

Station	Description
G-1	Located at an existing well at the golf course irrigation site to be used as supplemental irrigation source.

2. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

a. The Discharger is required to perform observations, sampling, and analyses according to the schedule given in Table 1. (Attachment A)

b. The sampling/monitoring works required at all of the STP, P, and L sampling stations and the daily analyses of coliform and chlorine residue at sampling station E-001 shall be performed on a year-round basis. All other sampling/-monitoring works are required only during those periods when wastewater is being reclaimed for golf course irrigation use.

c. The chlorinator shall be checked on a daily basis for proper function and the result shall be included in the monthly self-monitoring report for review.

V. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violation of Requirements:

In the event the Discharger is unable to comply with the conditions of the water reclamation requirements and prohibitions due to:

(a) maintenance work, power failure, or breakdown of waste treatment equipment, or

(b) accidents caused by human error or negligence, or

(c) other causes such as acts of nature,

the Discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written report shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to prevent the problems from recurring.

2. Self-Monitoring Reports

Written reports shall be filed regularly for each calender month by the fifteenth day of the following month. The reports shall be comprised of the following:

a. Letter of Transmittal:

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include a discussion of requirement violations found during the past month and actions taken or planned for correcting violations, such as operation modifications and/or facilities expansion. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

b. Results of Analyses and Observations

Tabulations of the results from each required analysis and/or observations specified in Table 1 by date, time, type of sample, and station.

c. List of Approved Analyses

(1) Listing of analyses for which the Discharger is approved by the State Department of Health.

(2) List of analyses performed for the Discharger by another approved laboratory (and copies of reports signed by the laboratory director of that laboratory shall also be submitted as part of the report).

I, Roger B. James, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with the Water Reclamation Requirements established in Regional Board Order No. 86-68.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.

Roger D. James

ROGER B. JAMES
Executive Officer

Effective Date: SEPTEMBER 17, 1986

Attachments:
A. Table I
B. Checklist for Standard Observation at irrigation site

ATTACHMENT A

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSES

SAMPLING STATIONS	STP-001 thru STP-003		E-001	P-1 thru P-'n'	L-1 thru L-'n'	I-1 thru I-'n'	G-1
Type of Samples	R	G	G	G	O	O	G
Flow Rate, (MGD)	D						
5-day BOD, (mg/l)		M	2W				
Suspended Solids, (mg/l)		M	2W				
pH, (unit)		M	2W	M			
Dissolved Oxygen, (mg/l)		M	2W	M			
Dissolved Sulfides, (mg/l), (1)		M	2W	M			
Settleable Matter, (ml/l-hr)		M	2W				
Chlorine Residual, (mg/l)			5/W				
Total Coliform, (MPN/100 ml)			5/W				Q
Total Dissolved Solids, (mg/l)							Q
Nitrate, (mg/l)							Q
Applicable Standard Observations					W	W(2)	

LEGEND FOR TABLE 1

Type of Sample

R= Flowmeter reading, reported as daily average,
G= Grab sample,
O= Observations,

Sampling Frequency

D= Daily,
W= Once per week,
2W= Every two weeks,
M= Monthly,
Q= Quarterly (every 3 months),
5/W= Daily, five days per week,

Notes:

(1). Analyze for this item only when Dissolved Oxygen is below 2.0 mg/l.

(2). During the irrigation season, the discharger shall perform standard

observations and record the findings on the attached checklist (Attachment B). The checklist shall be attached to the monthly self-monitoring report and submitted to the Board for review. The observations must be made during the periods when reclaimed wastewater is actually being used for irrigation.

ATTACHMENT B

Checklist for Standard Observation at Irrigation Site

1. Name of User: _____

2. Month and Year: _____

3. Circle dates that Reclaimed water being used: 1 2 3 4 5 6 7 8 9 10 11

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

4. Total gallons used for the month: _____

5. Required weekly observations: (Fill in the date of the inspection and write "yes" or "no" for each observation.)

Date and Time					
Escape of Reclaimed Wastewater from the Irrigation Site by Surface Flow or Airborne Spray					
Wastewater Used on Unauthorized Areas					
Odor from Wastewater					
Mosquitoes Breeding Resulted from Wastewater Ponding					
Warning Signs Properly Posted					
Public Contact with Wastewater					
Alarm System Failure					
Inadequate Standby Chlorine Supply Stored On-site					

If any of the observations were yes, a written report containing the following information shall be submitted:

(1) State time when noted violation(s) was observed and, if appropriate, show its location on a map.
(2) Explain cause and extent of violation(s) observed.
(3) Describe corrective action taken and the dates compliance was achieved and irrigation was resumed.

6. I certify that the information in this checklist, to the best of my knowledge, is true and correct.

_____ _____
Signature of Operator Date